



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/825,178	04/16/2004	Shiro Nishimoto	44085-171	8286

7590 07/31/2006

McDermott, Will & Emery
600 13th Street, N.W.
Washington, DC 20005-3096

EXAMINER

DEGHAN, QUEENIE S

ART UNIT	PAPER NUMBER
----------	--------------

1731

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/825,178	Applicant(s) NISHIMOTO ET AL.	
	Examiner Queenie Dehghan	Art Unit 1731	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 16 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 9-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 9-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 16 April 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☒ Certified copies of the priority documents have been received in Application No. 10/212144.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Specification

The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Watanabe et al. (2001/0041271). Murakami discloses a manufacturing process comprising of press molding a glass substrate between an upper

Art Unit: 1731

mold and lower mold without regulating the edge surface of the outer periphery portion of the glass ([0015]) and subsequently crystallizing or annealing the glass substrate ([0054]). Murakami further discloses steps for polishing and washing the glass substrate ([0058], [0059]). However, Murakami does not specifically recite lapping steps. Watanabe et al. disclose a manufacturing method for a glass substrate comprising a first and second lapping processes ([0025]), a polishing process ([0026]), and a washing process ([0035]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the lapping process of Watanabe et al. in order to improve upon the shape of the glass substrate, as taught by Watanabe et al.

4. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Watanabe et al. (2001/0041271), Nakamura et al. (2002/0054976) and Sakamoto (6,314,764). Murakami discloses a manufacturing process comprising of press molding a glass substrate between an upper mold and lower mold without regulating the edge surface of the outer periphery portion of the glass ([0015]) and subsequently crystallizing or annealing the glass substrate ([0054]). Murakami further discloses steps for polishing, washing, and cutting the glass substrate ([0058], [0059]). However, Murakami does not specifically recite lapping steps or a coring process. Watanabe et al. teach a manufacturing method for a glass substrate comprising a first and second lapping processes ([0025]), a polishing process ([0026]), and a washing process ([0035]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the lapping process of Watanabe et

al. in order to improve upon the shape of the glass substrate, as taught by Watanabe et al. Furthermore, Nakamura et al. teach a method for manufacturing a glass substrate comprising of press molding between an upper and lower mold ([0009]), wherein the outer surface of the glass substrate is unprocessed ([0048]). Nakamura et al. further teach a core drilling process for forming a center hole, a precision inner periphery edge surface process ([0061]), and polishing all the processed surfaces of the glass substrate ([0067], [0068]). Since Nakamura et al. teach forming a glass substrate from an axisymmetric transformation; it would be obvious to one of ordinary skill to expect that the center core that is drilled out is at the center of gravity of the glass substrate ([0048]). Sakamoto also teach a center hole punching process for a glass substrate (col. 3 lines 54-56) and a polishing step for the inner edge of glass substrate (col. 1 lines 28-30). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the core drilling and inner edge processing steps of Nakamura et al. and Sakamoto in order to create a doughnut shape disk with a mirror surface by removing the projections on the disk caused by the molds, as taught by Nakamura et al. ([0067]).

5. Claims 11-12, 16 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Sakamoto (6,314,764). Regarding claims 11-12, Murakami discloses a manufacturing process comprising of press molding a glass substrate between an planar upper mold and lower mold without regulating the edge surface of the outer periphery portion of the glass ([0015], figure 2a, 2b) and subsequently crystallizing or annealing the glass substrate ([0054]). Murakami

further discloses steps for polishing, washing, and cutting the glass substrate ([0058], [0059]). However, Murakami does not specifically recite a lapping step. Sakamoto teach press molding a glass substrate to give a disk shape form, an annealing process, lapping process, polishing process and a washing process (col. 1 lines 25-51). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the process steps of Sakamoto, such as the lapping process, in the manufacturing methods of Murakami in order to adjust the thickness of the glass substrate, as taught by Sakamoto.

6. Regarding claim 16, Murakami fails to disclose details for the crystallization or annealing steps of the glass substrate. Sakamoto teach an annealing step where the glass is maintained at a glass transition temperature, subsequently cooled to a warp point at a comparatively slow speed and afterwards, cooled at a comparatively high cooling speed (col. 3 lines 40-45). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the annealing step of Sakamoto to remove strain in the glass substrate.

7. Regarding claim 18, Murakami discloses the step of forming a recording layer on the substrate ([0061]).

8. Claims 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Sakamoto (6,314,764), as applied to claim 11 above, in further view of Takagi et al. (WO 00/66504, presented in 6,539,750).

Although Murakami mold comprises a sleeve that serves as a spacer between the lower and upper molds ([0048]), Murakami and Sakamoto fail to disclose a spacer that makes

contact with the molding surface of the lower mold. Takagi et al. teach a planar mold, wherein a parallel spacer is intervened between the upper mold and the lower mold and is in contact with the molding surface of the lower mold (col. 7 lines 24-26, figure 1B). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the spacer of Takagi et al. in the molding process of Murakami and Sakamoto in order to control the thickness of the glass substrate formed.

9. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Sakamoto (6,314,764), as applied to claim 11 above, in further view of Zou (6,627,566). Murakami discloses a crystallization step and an annealing step, but not the details of the steps. Zou teaches a method for manufacturing a glass substrate comprising of a crystallization step, where the glass substrate is heated up to the glass transition point $T_g+50^{\circ}\text{C}$ to $T_g+300^{\circ}\text{C}$ of the glass material, cooled to a temperature in the vicinity of the glass transition point and then gradually cooled (col. 13 line 56 to col. 14 line 1, col. 19 lines 16-28, Table 1). Zou also teaches an annealing step where the glass substrate is maintained at a temperature around T_g of the glass and cooled (col. 19 line 9-13). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the crystallization or annealing steps of Zou in the process of Murakami and Sakamoto in order to provide for a glass substrate with high strength.

10. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Murakami (2002/0139145) in view of Sakamoto (6,314,764), as applied to claim 11 above, in further view of Nakamura et al. (2002/0054976). Murakami and Sakamoto fail

Art Unit: 1731

to disclose an inspection step. Nakamura et al. teach a method for manufacturing glass substrates comprising of a inspection step where the substrate is confirmed to be within the desired ranges ([0036] to [0040]). It would have been obvious to one of ordinary skill in the art at the time the invention was made to utilize the inspection step of Nakamura et al. in the process of Murakami and Sakamoto in order to ensure the surface quality of the glass substrate has been obtained.

Conclusion

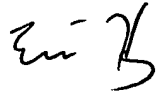
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Queenie Dehghan whose telephone number is (571)272-8209. The examiner can normally be reached on Monday through Friday 8:30am - 5:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1731

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Q Dehghan


ERIC HUG
PRIMARY EXAMINER